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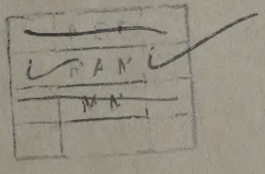
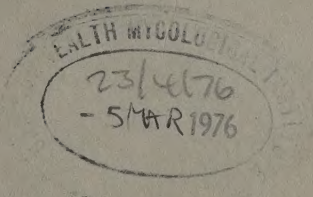
Report of the

NINTH SESSION OF THE PLANT PROTECTION COMMITTEE FOR THE SOUTHEAST ASIA AND PACIFIC REGION

New Delhi, India
2-9 November 1973





FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

AGP:1974/M/2

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Held in New Delhi, India
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Rome, 1974

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I. INTRODUCTION

The Plant Protection Agreement for the South East Asia and Pacific Region established the Plant Protection Committee on 2 July 1956. The Committee, which consists of representatives of the participating governments, acts as advisory body to these governments - which now number 18 - on matters relating to the Agreement and considers and makes recommendations on plant protection problems, particularly those requiring regional cooperation.

The Ninth Session of the Committee was held by courtesy of the Government of India, in New Delhi, from 2 to 9 November 1973. The Session was attended by representatives of nine participating governments as well as observers from two other governments and the South Pacific Commission. Six general meetings and eight sub-committee meetings were held. In all, 41 delegates and 19 observers participated in the Session and 60 documents were circulated. Invitational papers on Plant Viruses: their Detection and Control; and Chemical Control of Pests and Diseases and Pesticide Residues with particular reference to Agricultural Commodities in International Trade, were prepared by Dr. Y.L. Nene of India and Mr. J.T. Snelson of Australia, respectively.

Mr. T.P. Singh, Secretary of Agriculture, welcomed the participants to the Ninth Session of the Committee and was gratified to note that the problems of plant protection received high priority from FAO, particularly in supporting the strengthening of national plant protection services and fostering international cooperation. On behalf of the Director-General of the Food and Agriculture Organization of the United Nations, Dr. D.L. Umali, Assistant Director-General and Regional Representative for Asia and the Far East, welcomed the delegates and observers. He expressed gratitude to the Government of India and, particularly, to the Minister of Agriculture, for hosting the Session and making excellent arrangements. Dr. Umali briefly reviewed the progress made by the Committee and informed the participants that the FAO Regional Conference, which is the highest forum in the region for agricultural development, in its Sessions of 1970 and 1972 noted with satisfaction the achievements and activities of the Plant Protection Committee. Dr. Umali continued that FAO had recognized the usefulness of international and regional cooperation in plant protection and made constant efforts to achieve such cooperation. While recognizing the serious efforts made by Member Governments, he emphasized the need for more concerted efforts in strengthening plant protection activities in order to increase agricultural productivity in the region. He reported on the progress of various current activities in plant protection in the region that are supported by FAO, UNDP, bilateral and some multilateral agencies, and in this connection he made a reference to the recommendation of the Eleventh FAO Regional Conference on the

need for greater cooperation and integration of the work of the regional technical bodies into the regional overall programme of FAO in the region.

His Excellency, Mr. Fakhruddin Ali Ahmed, Minister of Agriculture, Government of India, in delivering his inaugural address, pointed out that plant protection had assumed very great importance, particularly in the developing countries where the need is so great to produce more food and other agricultural commodities in order to eliminate hunger and want. The Minister stressed the urgent need to develop cooperative action not only in treating crops effectively to prevent damage due to pests and diseases but to find ways and means to prevent the introduction of new and exotic pests and diseases into the countries in the region. Mr. Ahmed particularly cautioned against the dangers associated with modern air traffic in the introduction of unknown potential and actually dangerous pests and diseases. In this connection, he stressed the Committee's role in developing well designed and scientific measures to minimize the possibilities of such introductions. The Minister of Agriculture, while briefly highlighting the achievements of the plant protection programme in India, considered that the primary need is the education of farmers to induce them to take plant protection measures and to assist them in undertaking such measures. Therefore, in his view, a well trained and well equipped extension organization is an essential pre-requisite for an efficient plant protection programme. In this connection the Minister mentioned the facilities available at the Central Plant Protection Training Institute at Hyderabad, India, which is being strengthened with assistance from FAO/UNDP.

While the Minister of Agriculture recognized the accomplishments of the Committee, he asked the Committee to direct its attention to the immediate and most urgent problems in plant protection of the countries in the region. He emphasized particularly the need to coordinate national efforts for the common good of all people. He said that isolation in any sphere of human activity is a thing of the past and the future can hope to prosper only through cooperative efforts and sharing of resources.

Mr. M.S. Harahap, of Indonesia, responding on behalf of the delegates and observers, expressed the appreciation and gratitude of the participants and their governments to FAO and to the Government of India for convening the Session in India and for the excellent arrangements and facilities contributing to the success of the Session.

II. PARTICIPATION AND ORGANIZATION

DELEGATIONS OF PARTICIPATING GOVERNMENTS

Australia

J.R. Morschel	Assistant Director-General (Plant Quarantine), Department of Health Canberra, A.C.T. 2605

India

S.N. Banerjee	Plant Protection Adviser to the Government of India Ministry of Agriculture (Department of Agriculture) Directorate of Plant Protection Quarantine and Storage 409 B-Wing, Shastri Bhawan New Delhi 110-001
O.S. Bindra	Senior Professor and Head, Department of Entomology Punjab Agricultural University Ludhiana (Punjab)
Ishwar Prakash	Animal Ecologist Central Arid Zone Research Institute Jodhpur (Rajasthan)
K.K. Nirula	Deputy Director (Training) Central Plant Protection Training Institute, Rajinder Nagar Hyderabad-30 (Andhra Pradesh)
K.D. Paharia	Secretary (Central Insecticides Board) Ministry of Agriculture (Department of Agriculture) Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
N.C. Pant	Head, Division of Entomology Indian Agricultural Research Institute New Delhi 110-012

P.L. Renjhen	Assistant Director (Plant Quarantine) Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
A.R. Seshadri	Head, Division of Nematology Indian Agricultural Research Institute New Delhi 110-012
D.N. Srivastava	Assistant Director-General Indian Council of Agricultural Research Krishi Bhavan New Delhi 110-001

Indonesia

M.S. Harahap	Director Plant Quarantine Directorate Department of Agriculture Jalan Salemba 16 Jakarta

Malaysia

K.G. Singh	Head, Plant Quarantine Division Department of Agriculture Jalan Gallegher Kuala Lumpur (Peninsular Malaysia)

Nepal

P.N. Rana	Chief Entomologist Department of Agriculture Entomology Division Khumeltar Lalitpur

Sri Lanka

O.S. Peries	Director, Rubber Research Institute Agalawatta Sri Lanka

Thailand

Riksh Syamananda	Director of Plant Pathology Division Department of Agriculture Bangkhen, Bangkok-9

Adul Worawisitthumrong	Chief, Regulatory Division Department of Agriculture Bangkhen, Bangkok-9

Vietnam

N.L. Duyen	Chief of Plant Protection Service Ministry of Agriculture P.O. Box 427 Saigon - Vietnam

United Kingdom

Hong Kong

Mrs. Vera Lee	Plant Pathologist Agriculture and Fisheries Department Canton Road Government Offices Kowloon, Hong Kong

OBSERVERS

India

S.K. Anand	Assistant Plant Pathologist Plant Quarantine and Fumigation Station Attari (Distr. Amritsar), Punjab
P.C. Bansode	Technical Officer Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
G.N. Bhatia	Plant Protection Specialist Ministry of Agriculture Krishi Bhavan New Delhi 110-001
S.K. Das	Assistant Director (Planning and Coordination) Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
J.S. Gill	Assistant Director (Locust Control) Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
N.C. Joshi	Assistant Director (Weedicides) Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)

D.S. Khaturia	Documentation Entomologist Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
K.C. Mathur	Assistant Director (Surveillance) Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
P. Nandi	Specialist (Plant Protection) National Commission of Agriculture Government of India Vigyan Bhavan Annex, New Delhi 110-011
V.K. Pathak	Assistant Plant Pathologist Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
M.H. Rao	Assistant Plant Pathologist Plant Quarantine and Fumigation Station 6, Clive Battery Madras 600001
K.C. Sanwal	Nematologist (Quarantine) Division of Nematology Indian Agricultural Research Institute New Delhi 110-012
T.P. Sriharan	Scientist (Entomology) Indian Council of Agricultural Research Krishi Bhavan New Delhi 110-001
D. Srinath	Deputy Storage Entomologist Directorate of Plant Protection Quarantine and Storage N.H./IV, Faridabad (Haryana)
P.M. Thomas	Deputy Zonal Manager Food Corporation of India New Delhi 110-001
S.R. Wadhi	Quarantine Entomologist Division of Entomology Indian Agricultural Research Institute New Delhi 110-012

Japan

Hideo Fukuda	Director of Plant Protection Division Ministry of Agriculture and Forestry Tokyo
Mosatoshi Takada	In-Charge of Plant Quarantine Plant Protection Division Ministry of Agriculture and Forestry Tokyo
Shigeyoshi Nishiwaki	Second Secretary of Embassy of Japan Chanekyapuri New Delhi 110-017

Nepal

G.H. Plumb	Plant Protection Officer c/o UNDP/FAO/NEP-12 Kathmandu

New-Zealand

L.G. Morrison	Deputy Director (Plant Health) Advisory Services Division Ministry of Agriculture Box No. 2298 Wellington

South Pacific Commission

M.H. Lambert	Tropical Agriculturalist South Pacific Commission B.P.D. 5 Noumea, New Caledonia

Thailand

L.C. Knorr	Project Manager, UNDP/FAO Plant Protection Project (THA/68/526) c/o UNDP, G.P.O. Box 618 Bangkok 5

Special Invitee

Y.L. Nene	Professor and Head of the Department of Plant Pathology, G.P. Plant University of Agriculture and Technology Pant Nagar (Distr. Naini Tal) Uttar Pradesh

FAO Staff

D.B. Reddy	Regional Plant Protection Officer and Secretary of the Plant Protection Committee FAO Regional Office for Asia and the Far East Bangkok
F. Piraud	Interpreter
Ann Robson (Mrs.)	Interpreter
J. Noverraz (Mrs.)	Interpreter
J. de Clarens (Mrs.)	Interpreter

OFFICERS OF THE SESSION

Dr. S.N. Banerjee (India) was elected Chairman of the Plant Protection Committee. The Committee also elected Mr. M.S. Harahap (Indonesia) as Vice-Chairman of the Session.

Dr. D.B. Reddy (FAO) served as Secretary.

SUB-COMMITTEES

One Drafting Sub-Committee and two Technical Sub-Committees were appointed to serve during the Session as follows:

Drafting Sub-Committee

S.N. Banerjee (India), Chairman; J.R. Morschel (Australia); O.S. Peries (Sri Lanka); Riksh Syamananda (Thailand); K.G. Singh (Malaysia); D.B. Reddy (FAO), Secretary.

Sub-Committee to Consider Regulatory Measures and Special Problems in Plant Quarantine

J.R. Morschel (Australia), Chairman; Adul Worawisittumrong (Thailand); S.K. Anand (India); M.S. Harahap (Indonesia); L.G. Morrison (New Zealand); O.S. Peries (Sri Lanka); P.N. Rana (Nepal); P.L. Renjhen (India); M.H. Rao (India); K.G. Singh (Malaysia); M. Takada (Japan); S.R. Wadhi (India); Vera Lee (U.K. - Hong Kong), Rapporteur; D.B. Reddy (FAO).

Sub-Committee to Consider Special Plant Protection Problems and Training

Riksh Syamananda (Thailand), Chairman; O.S. Bindra (India); N.L. Duyen (Vietnam); Hideo Fukuda (Japan); N.C. Joshi (India); L.C. Knorr (Thailand); M.H. Lambert (SPC); K.K. Nirula (India); G.H. Plumb (Nepal); Ishwar Prakash (India); T.P. Sriharan (India); D.N. Srivastava (India); K.D. Paharia (India), Rapporteur; D.B. Reddy (FAO).

III. PRESENT STATUS OF PLANT PROTECTION AGREEMENT

The Committee welcomed Western Samoa as new Member of the Committee. The status of the Agreement at the time of the present Session was as follows:

Country	Date of Signature	Date of Ratification	Date of Adherence	Date of Acceptance of Amendments to Article 1a 1/
Australia	27 February 1956	Not required		17 July 1969
Sri Lanka	27 February 1956	Not required		28 January 1969
United Kingdom	29 March 1956	3 December 1956		31 December 1968
Laos	25 May 1956	17 March 1960		20 August 1968
Indonesia	28 June 1956	21 December 1967		
Portugal	2 July 1956	Not required		27 January 1969
Vietnam	2 July 1956	Not required		
India	2 July 1956	Not required		11 April 1969
Thailand	-	-	26 November 1956	6 June 1969
France	-	-	20 August 1957	
Malaysia	-	-	20 November 1957	6 March 1969
Pakistan	-	-	8 January 1958	9 June 1969
Burma	-	-	4 November 1959	
Philippines	-	-	11 June 1962	12 November 1969
Nepal	-	-	12 August 1965	4 June 1969
Khmer Republic	-	-	27 January 1969	27 January 1969
Fiji	-	-	16 December 1970	16 December 1970
Western Samoa	-	-	23 December 1971	23 December 1971

1/ The amendment to Article 1(a) entered into force for all contracting governments on 16 August 1969 (i.e. on the 30th day following acceptance by two-thirds of the contracting governments as provided for in Article XI-4 of the Agreement).

The Secretary reported to the Committee the action taken by FAO regarding the adherence of the Republic of Singapore to the Agreement as recommended by the eighth Session of the Committee. The matter was taken up at Ministerial level and the Secretary had also had personal discussions with the Director of Primary Industry. While expressing its support to the activities of the Plant Protection Committee and its desire to cooperate with the Committee, the Republic of Singapore expressed its inability to adhere to the Plant Protection Agreement.

The Committee noted with regret the inability of Singapore to become a party to the Agreement and urged that efforts should be continued both by FAO and the concerned governments to encourage and persuade Singapore to become a Member of the Committee. In view of the strategic geographic position of Singapore vis-à-vis its neighbours which are primarily agricultural countries, the Committee considered it highly desirable that Singapore should become a party to the Agreement. The Committee also suggested that the Governments of Malaysia and Indonesia should take up the question of Singapore's membership to the Committee at appropriate levels.

Eighteen countries within the redefined "Region" are now parties to the Agreement. The Committee was informed of the present state of membership in respect of Japan and New Zealand. The Committee appreciated the efforts of these two governments to become parties to the Agreement and recognized the procedural delays because of the need for certain adjustments in their own plant quarantine regulations to conform to the provisions of the Agreement. The Secretary reported that approaches had been made to Bangladesh, Korea, Maldives and U.S.A. in connection with membership of the Committee.

The Committee, while considering the geographic scope of the Agreement and the recent political changes in the region, suggested that FAO might look into the possibilities of further extension of the "Region".

IV. PROGRAMME AND ACTIVITIES OF THE COMMITTEE

- REPORT OF THE EXECUTIVE COMMITTEE -

STATEMENT BY THE SECRETARY

The Committee considered the report of the Secretary as presented in document AGP:PPC/SEAP/73/6/9 and the supplementary information given in documents AGP:PPC/SEAP/73/6/7 and AGP:PPC/SEAP/73/6/8. The programme and activities of the Committee, as reviewed by the Executive Committee, are also reported in documents AGP:PPC/SEAP/73/6/7 and 8.

The Committee endorsed and approved the recommendation of the Ninth and Tenth Standing Technical Sub-Committee Meetings that the Standing Technical Sub-Committee should be redesignated Executive Committee and that the designation of Technical Secretary should be changed to that of Secretary. Therefore, in future, the Executive Committee will perform the functions of the former Standing Technical Sub-Committee.

The Executive Committee held its ninth meeting in Bangkok, from 17 to 19 January 1973, and the tenth meeting was held on 1 November 1973, immediately prior to the Ninth Session of the Committee at New Delhi, India. All the members of the Executive Committee attended the meetings. The Executive Committee reviewed and endorsed the activities carried out by the Secretary.

The main activities carried out are summarized below:

(a) the Information Service was continued as in the past in the form of Quarterly Newsletters, Technical Documents and Information Letters;

(b) assistance was provided in organizing and encouraging training programmes and the Secretary also participated in some courses;

(c) action was initiated regarding the participation of some governments in the Region as parties to the Agreement;

(d) the host list of diseases, pests and weeds of rice was revised and circulated to Member Governments;

(e) assistance was provided in the identification, formulation, planning and implementation of projects in plant protection

in several countries of the region. Projects were formulated for Bangladesh, Burma, India, Indonesia, Khmer Republic, Korea, Laos, Malaysia, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, Vietnam and Western Samoa;

(f) six projects under regional consultancy were initiated, formulated and executed, of which two were at national level and four at regional level. The two regional consultations consisted of FAO Regional Expert Panels on vertebrate pest management and rice gall midge. Also the reports of these consultations were prepared and finalized;

(g) action was initiated to convene a technical meeting on container shipping and it is hoped that the meeting will be held early next year in Japan;

(h) information was collected and collated from acknowledged authorities on pests and diseases which are included in Appendix A to the Agreement;

(i) information was collected and collated on the quarantine restrictions on imports of plant materials from the region;

(j) the Secretary participated in initiating and organizing regional seminars on different aspects of plant protection and had also cooperated with other agencies.

The Committee recognized the great services rendered to international cooperation in plant protection and, particularly, regional cooperation in this region by Dr. Lee Ling, former Divisional Deputy Director and Chief of the Plant Protection Service, FAO, and requested the Chairman of the Committee to convey to the Director-General of FAO the Committee's appreciation and gratitude for the services of Dr. Ling.

4.1 THE SOUTH PACIFIC COMMISSION

The South Pacific Commission furnished technical and other information on spread and control of pests and diseases, and weeds, and on matters related to plant quarantine in the territories within its scope. It continued to send experts on short-term assignments to territories requesting these services and to organize practical training courses on crop protection. In July 1973, the Commission took the necessary steps to assist American Samoa in the biological control of Brontispa longissima, a pest of the coconut palm, which recently made its appearance in that region.

The Commission published an agricultural extension handbook in English and French, entitled "Weeds and Weed Control in the South Pacific". The Tropical Agriculturalist of the Commission played an active role in the Fourth Conference of the Asian Pacific Weed Science Society held in Rotorua (New Zealand) in March 1973. He is the Society's coordinator for the region.

The South Pacific Commission will soon appoint a Plant Protection Specialist, principally to assist territories in carrying out or continuing their inventories of crop pests, implementing the necessary control measures and harmonizing plant quarantine legislation and methods in the South Pacific.

The South Pacific Commission worked in close cooperation with the Regional Plant Protection Officer and Secretary of the Plant Protection Committee in the field of plant protection.

4.2 THAILAND

In view of the ever-increasing responsibilities of the Secretary, Thailand reiterated its recommendations made at the sixth, seventh and eighth Sessions, as well as during the eleventh Session of the FAO Regional Conference in New Delhi, that additional technical and clerical assistance be provided to him.

In compliance with the general recommendations of the eighth Session, the Plant and Quarantine Service had been strengthened by the provision of fumigation, sterilization and disposal equipment which has been installed at Don Muang International Airport and at plant quarantine headquarters. Renovation of post-entry facilities at plant quarantine headquarters, microscopes, dazor lamps, and hand lenses for the 19 plant quarantine field stations has also been achieved.

With the assistance of an FAO Plant Quarantine Expert, a training manual had been prepared for inspectors. Twenty key quarantine inspectors have been trained so far and additional courses are planned for the future. Advantage has been taken, and will continue to be taken, of the training assistance offered by various governments. The Thai Government would fully cooperate with international conventions on container shipping and would be willing to send one or more delegates to the proposed FAO Technical Committee Meeting on containerization.

4.3 AUSTRALIA

Khapra Beetle and two related species of Trogoderma were declared as quarantinable diseases in 1972. The proclamation provided necessary legislative power to fully quarantine any incidence or suspected incidence of Khapra beetle on any vessel, or in any place, within the country.

The increasing use of container transport continues to challenge the plant quarantine service. After careful preliminary investigations and trials, the in-transit fumigation of timber packaging in containers was being more widely adopted with full precautions. Investigations were proceeding on in-transit fumigation of containers carrying agricultural products.

There was an increasing demand for the import of insects as biological control agents. However, fungi, nematodes and viruses were now also involved. Following the introduction of the rust fungus, Puccinia chondrillina, in 1971, as a biological control agent for skeleton weed - the first time that, in Australia, a fungus was introduced as a means of biological control - authoritative reports indicated that a considerable control of the weed in the wheat growing areas of eastern Australia had taken place.

The Australian Agricultural Council agreed to the establishment of national repositories for virus-tested fruit varieties of grapes, citrus, pome and stone fruits. The responsibility for convening the national committee responsible for supervising the establishment and maintenance of these units at five proposed locations was with the Plant Quarantine Service.

Since 1973, assistance has been given under the Colombo Plan to Indonesia in the form of equipment and experts. On-the-job training, in Australia, has been provided for a small number of Indonesian Plant Quarantine Officers.

A Plant Quarantine Research Station - the only one of its type in Australia - is currently being installed in Canberra. It is expected to have this unit operational for the Fourth International Course in Plant Quarantine, scheduled for early 1974.

4.4 NEW ZEALAND

A Plant Act enabling regulations to be made in relation to the importation of plants, control of diseases within the country and control of crops intended for export, has been published in the Official Gazette. In 1973, plant quarantine and import regulations have been promulgated. The post of Senior Deputy Director (Plant Health) with responsibility for internal as well as external plant sanitation has been established.

A central "clearing house" to which all organizations and individuals report immediately all records of pests and diseases believed to be new to New Zealand for checking, evaluating and advising action has been established. Training has been provided for all "coordinators" who would have to manage any regional eradication campaigns that might arise. To determine which diseases were present, initial trial surveys of some major crops, as well as their incidence, distribution and relative importance have been included. Seeds of most major crops required a permit before they could be introduced and, frequently, have had to be quarantined.

A survey of more than 2 000 ha of potato crop revealed the presence of Heterodera pallida on less than 50 ha. Efforts are being made to contain and eradicate this newly introduced nematode.

4.5 MALAYSIA

Recommendations made by the Eighth Session of this Committee have been implemented. The staffing position has considerably improved since the beginning of 1973. Although the declared entry points are still the same in number, additional facilities have been provided at the entry points bordering Thailand and at other places within the country. At Rantau Panjang, Kelantan, the development of the Golok Bridge has now facilitated the movement of motor and passenger traffic between Thailand and Malaysia. The new complex houses the Departments of Immigration, Health, Customs, Railway and Plant Quarantine. The development of a new airport (Senai) at Johore has necessitated the provision of facilities for plant quarantine here as well. At nearly all entry points, insect-proof houses have been built and other laboratory and manpower facilities have been strengthened.

Most of the material imported consists of cover crop seeds of Pueraria javanica, Centrosema pubescens, Calopogonium mucuniodes, C. caeruleum, Tephrosia candida, T. vogelii, Stylosanthes gracilis and Flemingia congesta. The bulk importations usually arrive through the Johor Bahru causeway from Singapore and this is source of concern as some countries in the Region are not members of the Committee.

As containerization facilities are still developing, it is not unlikely that material imported through these means would cause a quarantine hazard especially as regards the Khapra beetle, Trogoderma granarium, which is not present in western Malaysia.

In view of the importance of the South American leaf blight pathogen (Microcyclus ulei) to the Malaysian rubber industry, a Committee - at national level - was established in 1972. The Committee's objectives are:

i) to strictly enforce legislative measures in case of an outbreak under standby orders;

ii) to set aside token votes to be used in case of an emergency;

iii) to keep proper records of all scientists/tourists travelling regularly to and from Malaysia;

iv) to familiarize local scientists with the disease by giving them an opportunity to check by themselves, first-hand, the ravages caused by the disease.

Plant quarantine and pesticide legislation, comprehensive for both eastern and peninsular Malaysia are under consideration. It is hoped that both these draft proposals will be approved by the Parliament in the near future.

In May 1972, a major outbreak of the beetle Promecotheca cumingi Baly was detected in Wellesley Province. Environmental, other biological factors and prompt action through a publicity campaign, brought the pest under control.

The FAO/UNDP Project to strengthen crop protection services, formulated with the assistance of the FAO Secretariat, became operational in September 1973. It is hoped that, during the three year duration of the project, significant progress will be made in plant quarantine, pathology, insect pest control and pesticides implementation.

4.6 NEPAL

It was the first time that Nepal attended a Session of the Committee. The Nepalese took this opportunity to inform the Secretariat that plant quarantine legislation has been approved and rules and regulations under preparation.

Necessary steps have already been taken for the establishment of a plant quarantine station and arrangements made for the construction of a laboratory, a glasshouse, and some fumigation chambers. Necessary equipment has already been ordered and it is expected that the quarantine service should start functioning in the near future. As regards some citrus and potato diseases, domestic quarantine measures are already in operation. Two officers have already been trained in plant quarantine in Australia and more officers are supposed to attend the proposed International Plant Quarantine Training Course, to be held in Australia in 1974.

The recent outbreak of Cirphis unipuncta on maize and Pyrilla sp. on sugarcane had hastened the Government's decision to strengthen the plant protection service in various parts of the country. Assistance from FAO had been made available to strengthen plant protection activities in Nepal and, at present, one FAO expert is associated with the plant protection service in the Department of Agriculture.

4.7 SRI LANKA

Since the last country statement made in October 1971, no important changes have been made in the organization of the Plant Quarantine Service in Sri Lanka. The plant quarantine stations at the airports and sea ports have the basic equipment for the inspection and treatment, when necessary, of plants and plant materials entering the country. Inspection of plants and plant materials for export and issuance of phytosanitary certificates are carried out by senior officers of the Department of Agriculture; the phytosanitary certificates are signed by the Director of Agriculture.

Undergraduates taking courses in agriculture are given basic training in plant quarantine methods as part of their curriculum, but the training of plant quarantine officers was still inadequate. In this connection, assistance from Australia and India, which has now started a course at Hyderabad, in training two or three officers for the next three years or so is desirable. The Government of Sri Lanka is drafting an Act to regulate the import, manufacture, sale, transport, distribution and safe use of insecticides, fungicides, herbicides and other agricultural chemicals, throughout the country.

A short reference to the entry and control of Promecotheca cumingii would not be out of place in this report. The pest apparently entered the country sometime in 1969. The Government took action to bring all Departments concerned with plant protection to take concerted action against the pest in 1970, when it was found that it was spreading in spite of the measures enforced by the Coconut Research Institute. Parasites were introduced in 1971 and, by the beginning of 1972, it was well under control. At the present time the coconut palms in the sea coast area south of Colombo are green and lush again, a welcome change from the brown, fire-damaged appearance they had during the peak infection period.

This proved to be a good example of cooperative effort within and between countries to effect biological control of a pest on a country's economic crop. The active participation of FAO, which arranged to provide parasites and expert assistance, as well as the personal interest shown by Dr. Reddy of FAO, in the control of this devastating pest were gratefully acknowledged.

4.8 VIETNAM

The Plant Protection Service will concentrate on the protection of the entire area under IRRI varieties, estimated to cover about 30 percent of the total rice area - totalling about 2.7 million ha. To meet this objective, applied research, surveillance and strengthening of extension will receive priority. The serious pests affecting rice are brown plant hopper, stem borers and gall midge which are serious in the northern provinces. Surveys on population fluctuations of hoppers are planned to obtain information leading to the issuance of timely warnings. Among the diseases, sheath blight, bacterial blight and bacterial leaf streak have been recorded as major problems. Among the rodents, Rattus argentiventor is the most important and causes considerable damage. A survey in three delta provinces revealed 4 - 5 percent loss in production. Studies on rat reproductive cycle and damage have been undertaken in cooperation with the Rodent Research Centre in the Philippines. Tungro and grassy stunt are of localized occurrence. Control measures include the use of resistant varieties and chemical pesticides. Coordinated efforts are being made and involve credit organizations, private pesticide suppliers, agricultural services and provincial authorities in rice protection where IRRI varieties are grown. Demonstration and training activities have covered more than 1 000 villages. Pesticide control regulations have greatly contributed to the protection of the environment and to the consumers' safety. In recent years, the local pesticide industry has greatly developed and several pesticides have been formulated in the country. Technical grades of pesticides are exempt of import duties. In rehabilitation areas, pesticides are supplied free and sprayers given on loan.

Plant quarantine regulations have been revised in conformity with the recommendations of the Committee. Training of plant quarantine inspectors received priority and two candidates have been nominated for the proposed plant quarantine course to be held in Australia in early 1974. In 1969, Trogoderma granarium was intercepted in some lots of imported rice. The Khapra beetle has been eradicated and, since then, all imported cereals are fumigated as a compulsory measure. The need for assistance from international organizations, such as FAO and bilateral agencies, to strengthen plant protection and plant quarantine services has been recognized.

4.9 INDIA

4.9.1 Since the presentation of the last report, two more Plant Quarantine and Fumigation Stations have been established on the eastern land border with Bangladesh, raising their total number to 19. Basic equipment for inspection and treatment is available. Two plant segregation houses are at present available at Madras and Calcutta and a new one is being erected at Bombay; these facilities will be expanded during the next Five Year Plan. Rules have been revised in conformity with the recommendations of the Committee and are awaiting approval. Domestic quarantine is enforced against the Fluted Scale, San José Scale and Banana Bunchy Top, Potato Wart and Banana Mosaic. Advantage has been taken of the training courses organized in Australia; these proved to be most useful. It has been proposed to depute two officers for the next course to be held in 1974.

4.9.2 A training programme for custom officers stationed at international airports and seaports (Calcutta, Madras, Bombay and Cochin) has been organized. These courses have been compiled and published in the form of Plant Quarantine Information for Custom Officers.

4.9.3 In 1968 an Act was passed to regulate the import, manufacture, sale, transport, distribution and efficient use of insecticides; the Rules related thereto came into force on 1 August 1973. The country has made good progress in the local manufacture of pesticides and of a wide range of plant protection equipment. India is now in a position to export to neighbouring countries.

4.9.4 During the period under review, 21 courses in plant protection (of three months duration each) were organized and 855 senior plant protection personnel were trained at the Central Plant Protection Training Institute. Trainees from Afghanistan, Iran, Iraq, Nepal, the Philippines, Thailand and Yemen have also taken advantage of this Institute. An FAO/UNDP Project for expansion of the training facilities at the Central Plant Protection Training Institute, Hyderabad, has been officially submitted for approval and pre-project activities already started. India has undertaken pilot projects for the biological control of important pests and weeds and five regional stations have been established under this scheme. The pest surveillance activity has also been considerably enhanced and seven regional stations are already established; five more stations are being established during this year. A demonstration scheme on the use of herbicides has been in operation throughout the country to bring about consciousness amongst farmers as to the beneficial effect they may have. In India, a very large variety of germ plasm is being imported to cater to the needs of plant breeders; an X-ray examination of imported seeds has led to the detection of hidden infestation due to Chalcidoids and some bruchids. To meet this situation, Plant Quarantine Stations at international air and sea ports will soon be equipped with X-ray units for quick and efficient detection of hidden infestation of some categories of insects.

4.10 JAPAN

To cope with the ever increasing import of plants and plant materials, remarkable progress has been made in the construction and expansion of ports and port facilities throughout the country; to meet national demand, plant protection stations have been opened, during the past two years, at seven new ports. On 15 May 1972, when the Ryukyu Islands were returned to Japan, one central station and four sub-stations were established in Okinawa prefecture. To improve its efficiency, the Plant Quarantine Service was reorganized into the so-called "three step administration system", in April 1973.

For those foreign pests and diseases which are potentially dangerous, Japan has enforced a rigid quarantine policy. Embargoes are placed on host plants produced in, or shipped through the country (or area) where such pests and diseases are known to occur. Only when exporting countries have developed complete disinfection techniques and meet the requirements of Japanese regulations, is importation approved under special conditions. Among these, are papaya from Hawaii, ponkan from Formosa, orange, lemon and grape fruit from the Republic of South Africa. More recently, on 15 June 1972, orange, lemon and grape fruit imports were approved from Israel, and on 24 May 1973, imports from the Kingdom of Swaziland of oranges and grape fruits.

At the end of July 1972 the first case of an outbreak of the Golden nematode (Heterodera rostochiensis) was recognized in Hokkaido, north island of Japan. The outbreak was confirmed in an area located at the foot of Mt. Yohtei, where potatoes for starch manufacturing are the main crop, about 50 km southwest of Sapporo, a central city of Hokkaido. Since then, extensive surveys and relevant control and eradication measures have been undertaken.

On 1 July 1971 the Environment Agency was established to promote the overall administration concerning environmental protection; the Agency would also be responsible for control of the use of persistent agricultural chemicals and those inducing water pollution, as well as the establishment of standards for suspension of agricultural chemicals' registration from the viewpoint of residual toxicity. However, the other administrative responsibilities relating to agricultural chemicals still remain with the Ministry of Agriculture and Forestry.

4.11 UNITED KINGDOM - HONGKONG

On 4 February 1949 legislation controlling the importation of plants into Hongkong was introduced to protect the rubber industry of the southeast Asian countries. Such legislation prohibited the importation, into Hongkong, of any plant having the American tropics as origin, except under a special licence. In order to extend the effectiveness of these control measures and to comply entirely with commitments under the southeast Asia Plant Protection Agreement, the Hongkong Government is now actively considering the introduction of new plant import control and quarantine legislation which will bring her fully into line with international practices elsewhere and will protect the local farming community. The new legislation - to be entitled Plant (Import and Pest Control) Ordinance is based on the general recommendations by FAO and the commitments contained in the Plant Protection Agreement for the southeast Asia and the Pacific region. The legislation is further adjusted to provide for a plant quarantine service which will enable carrying out recommendations of the Plant Protection Committee for the above region, appropriate to the particular circumstances arising from Hongkong's geographical position and trading pattern, emphasis being placed on the control of plants and plant materials (seeds included) intended for propagation purposes.

Inspection of plants and plant materials for export and the issuance of phytosanitary certificates are under the responsibility of the Plant Protection Section of the Agriculture and Fisheries Department.

4.12 INDONESIA

A considerable number of staff from the main provinces have received training at national level. A number of staff from the Plant Protection Service have been trained in the Philippines, Japan, Holland and West Germany. A short-term consultant from FAO assisted the Government, in 1973, in preparing a project for strengthening the Plant Protection Service in that country.

Plant protection activities are fully geared to the implementation of the Food Production Programme launched within the framework of the Five Year Plan.

Attention has been given to dissemination of information on plant protection, organization of pest control farmers' groups at village level, plant protection demonstrations, provision and repair of plant protection machinery, supply and distribution of pesticides, control of outbreaks of pests and diseases, registration of pesticides and strengthening of the service in trained personnel, facilities and equipment. The integrated control approach has also been introduced in the plant protection methods.

In 1971, severe infestation by Sexava nubila on coconut trees was reported from the Sangir and Talaud Islands, north Sulawesi and from north Maluku. Approximately 3 million coconut trees in the former and 500 000 in the latter district were heavily damaged by this pest. In June 1972 heavy Diazinon air sprays were performed and the results were most satisfactory. In order to achieve quick control of outbreaks of pests and/or diseases, plant protection brigades have been established. A regulation on control of sale, storage and use of pesticides was enacted as Government Decree No. 7, 1973, and took effect on 17 March of the same year.

The extensive planting of high yielding varieties - which require a high level of fertilizer application - has given rise to new problems of pests and diseases. Outbreaks of rice bug (Leptocoriza acuta) in Lampung, tungro and grassy stunt diseases of rice in Sumatra, Java and Sulawesi are examples of such problems and need research. Other research projects include sugarcane, horticultural crops, plantation crops and citrus.

By Decree of the Minister of Agriculture, dated 9 August 1973, plants and planting material of Nicotiana tabacum and Gossypium spp. were designated as prohibited imports. These just added to the list of 16 other species of prohibited plants and planting material decreed on 9 August 1961. The Indonesian plant quarantine legislation has nearly been brought into line with the recommendations of the Committee. A Ministerial Decree for domestic quarantine, designed to prevent the spread or rice gall midge (Pachydiplosis oryzae), cocoa moth (Acrocercops cramerella), citrus vein phloem degeneration disease and water fern (Salvinia auriculata) is being drafted. The number of nationally trained Plant Quarantine Inspectors has increased from 90 in 1971 to 161 in 1973. The plant quarantine service has been strengthened with the return of two senior inspectors who had attended the international plant quarantine course held in Australia from October to December 1971. In order to provide nationally trained inspectors with foreign experience in plant quarantine, five inspectors have been sent abroad.

Since the last session of the Committee, 14 offices, one laboratory building, eight incinerators, one greenhouse, 25 staff houses have been built and 25 fumigation tests, 36 motor cycles have been provided. During the current fiscal year, three offices, 10 fumigation houses, 14 incinerators, 13 staff houses are planned to be built and 11 motor cycles are to be purchased.

Part of the technical aid provided by the Australian Government arrived early in 1973. It consisted of fumigation chambers, fumigation sheets, sets of entomological kit and methyl bromide cylinders. A plant quarantine expert from Australia has visited several quarantine stations to help and install the fumigation chambers and demonstrate their use.

Since December 1972, Khapra beetle (Trogoderma granarium) has been introduced through various ports of entry in 22 shipments of rice from Pakistan. Fortunately, these shipments were fumigated successfully with methyl bromide or phostoxin. Greater care has been exercised and special conditions of import, including cleanliness of the ships used, have been observed. Continuous surveys conducted by plant quarantine inspectors at the various ports of entry and their surrounding areas have not revealed the presence of this unwanted pest.

V. MEASURES FOR REGULATING IMPORTATION AND MOVEMENT OF PLANTS

The Committee reviewed in detail the previous recommendations on measures for the regulation of imports and movements of plants and related items, which have been summarized in document AGP:PPC/SEAF/73/8/10.

The Committee agreed that no alterations were necessary for the following:

> Banana, Abaca and other Musaceae, biological control agents, bread fruit, cashew, clove, cocoa, oil palm, pepper, pineapple, rice, sweet potato, taro, soil and rooted plants.

On the basis of developments in pests and diseases situations within the Region, the Committee agreed to the following additions:

> Giant African Snail, lettuce seeds, seed contaminants, soyabean, sunflower.

In addition, several modifications in relation to the recommended measures were made by the Committee. Details are given below:

5.1 CITRUS

A devastating disease, Greening or Leaf Mottling, has been observed throughout southeast Asia and is suspected to be caused by a mycoplasma-like organism.

Recognizing that it is impossible at this time to obtain citrus plants from any country where the phitosanitary services will confidently state that the material has been indexed for all known viruses and mycoplasma-like organisms and found free from all of them, the Committee recommended that importation of citrus planting materials be confined to seeds. Citrus seeds are believed not to carry these diseases. Most citrus species produce nucellar seedlings which conform closely to the parent trees.

5.2 COCONUT

On page 6 of Document 8/11, under the column diseases, the scientific name of causal organism of Red Ring, viz. Aphelenchoides cocophilus, has been changed to Rhadinaphelenchus occophilus.

Apart from this, "Tatipaka", disease of unknown etiology prevalent in Andhra Pradesh, India, has been included.

5.3 COFFEE

The words "mercurial fungicide", line 6, para. 2, page 7, were substituted by "suitable seed dressing".

5.4 FOREST TREES

The word "insects", line 4, para. 1, page 8, has been substituted by the word "pests".

5.5 FRUIT AND VEGETABLES

The importation of fruit and vegetables susceptible to fruitflies (Trypetidae), from countries where injurious fruitflies absent in the Region occur, should be prohibited unless the fruit and vegetables are certified by the exporting country to have been grown in an area where injurious fruitflies are not known to exist, or else that the fruit and vegetables have been treated in an recognized manner to kill all fruitfly larvae.

The Committee recommended the continuation of the collation of information on the distribution of serious diseases and pests of vegetables and the risks involved in the importation of fruit and vegetables for consumption, owing to the wide movements of these foodstuffs.

5.6 GIANT AFRICAN SNAIL

Special attention is drawn to the danger of introducing Achatina fulica with equipment and containers, as well as with plant produce.

5.7 GROUNDNUTS

The first sentence is redrafted as shown below:

> "To prevent the introduction of groundnut pests and diseases, only seed should be imported in the Region".

5.8 LETTUCE SEED

Lettuce mosaic may be introduced through seed and subsequently spread by aphid vectors. Seed certified free of mosaic should be used although such seed are limited at present.

5.9 MAIZE

The importation of maize should be as seed only and should not be permitted from areas infested with Erwinia stewarti. Territories affected by this pest include Canada, Mexico, Porto Rico, the USA, Italy, and the USSR.

5.10 ORCHIDS

The caption for item 16, page 9, was changed from "Ornamentals" to "Orchids".

5.11 ORNAMENTALS

The Committee considered the risks associated with the importation of ornamental plant material and recommended that imports of such material be in the form of seed. If essential, unrooted planting material (cuttings, budwood, etc.) should be imported in small quantities only, and with proper plant quarantine precautions. Imports of any rooted planting material should be free from original rooting medium and should be packed in sterile inert medium, e.g. vermiculite, and the plant material should have been examined in the growing fields/nurseries by the appropriate plant quarantine authorities. It was noted that many pests and pathogens are common both to ornamental plants and economic crops.

5.12 POTATO

Para. 4, item 19, "Potato", page 10, has been redrafted as follows:

> "Have all potatoes imported for consumption washed and/or brushed to free them from soil and treated with a sprout inhibitor."

5.13 RUBBER

1. The words "South American leaf blight (Dothidella ulei) have been changed to SALB (Microcyclus ulei), wherever occurring in pages 14 and 15, keeping in mind the latest nomenclature of the fungus.

2. Para. 4, page 14, first sentence deleted.

3. Page 15, after para. 1, in lieu of paras. 2 and 3, the following para. was inserted:

> "The Committee expressed concern that few countries involved in rubber production have taken any steps in connection with the Committee's recommendation which states 'The Committee strongly recommended that member countries where rubber is grown should prepare preliminary plans for eradication to meet any emergency situation'. Accordingly, the Committee again draws the attention of member countries to this particular recommendation."

Attention was drawn to the leaflet originally produced by the Malaya Rubber Research Institute which would be made available to other member countries.

5.14 SUGARCANE

After the last sentence, para. 4, under sugarcane, page 15, the following words were inserted:

"... and have been given heat therapy treatment."

5.15 SEED CONTAMINANTS

The Committee noted with concern that seed contaminants such as weed seeds, plant debris, soil clods (containing sclerotia and carrying destructive pests and diseases, e.g. cyst nematode - Heterodera schachtii and Phoma betae -) have been intercepted in imported seeds. As such, the Committee recommended that appropriate precautions be taken while importing seeds for sowing.

5.16 SUNFLOWER

Two serious diseases of sunflower, downy mildew and mosaic virus, have been carried and widespread through seed. Therefore, all introductions of seed should be submitted to quarantine measures.

5.17 SOYABEAN

Since soyabean seed is capable of carrying a large number of diseases, including the soyabean cyst nematode (Heterodera glycine) as a contaminant, full quarantine measures should be enforced with regard to introductions of soyabean seed.

5.18 TEA

The words "both in the country of origin and in the country of import" have been deleted from lines 4 and 5, para. 1, page 17.

5.19 TOBACCO

The following sentence has been inserted at the end of the para.:

> "It is noted that tobacco wild fire may be carried also with soya bean seeds."

5.20 TOMATO

As several important diseases are carried through tomato seeds, imported tomato seeds should be acid extracted or else appropriately treated.

VI. INTERNATIONAL PLANT PROTECTION CONVENTION

At its Eighth Session in 1971 (Report, page 19), the Committee had already considered this subject. However, it was made aware of the recommendation and the Report of the ad hoc Consultation on International Plant Protection Convention, held in Rome from 9 to 13 July 1973. While detailed comments on the Report of the ad hoc Consultation would require a careful study, the participating Governments were requested to submit their comments and suggestions to FAO by 1 September 1974, as recommended by the Consultation.

VI. RISKS IN BULK IMPORTS OF PLANT MATERIALS

During the Eighth Session, the matter of bulk import of plant materials was considered in detail. The Ninth Session acknowledged the risks associated with bulk imports of plant materials and endorsed the following recommendations of the Eighth Session:

> "The Committee stated emphatically that the introduction of seed or planting material in bulk is not compatible with the quarantine objective as a significant risk of introducing pests or diseases is involved. Its previous recommendation that small samples of seed should be imported under careful quarantine control and screening remains valid. Furthermore, the Committee did not foresee development of techniques which could fully eliminate all significant pathogens from planting materials and seeds when treated in large quantities."

VIII. COMMUNICATIONS WITHIN QUARANTINE AND WITH THE PUBLIC

The Committee unanimously recognized that good communications within the plant quarantine service and with the general public was highly desirable.

Some countries have made significant progress in developing a manual of administrative instructions in plant quarantine operations to assist plant quarantine officials in respective countries. However, some countries sought some guidance for the preparation of such manuals. New Zealand and Australia offered to prepare a brief set of guidelines to assist countries which still did not have an appropriate plant quarantine manual.

The Committee was gratified to see the endeavours made by some countries to produce attractive information brochures on plant quarantine for distribution to the public, particularly to travelling people. The Committee encouraged member countries to sustain this effort.

The Committee advanced the idea of producing a film on Plant Quarantine for use throughout the Region. The Food and Agriculture Organization of the United Nations was requested to explore the possibility of producing such a film.

During the Session, the Committee participants had the opportunity to see the film "The Case of the Travelling Garden", produced for the Plant Quarantine Service of Australia .

IX. PLANT VIRUSES: THEIR DETECTION AND CONTROL

Plant viruses are assuming a greater importance in plant protection. They rise a special problem in the movement of vegetatively propagating plant material. In order to obtain a general familiarity with the problem, the Committee considered an invitational paper prepared by Dr. Nene, of India. It was recalled that the Eighth Session of the Committee considered at length the problem of citrus decline in southeast Asia. As this disease complex is still of great economic significance in the region, the Committee reiterated its earlier recommendations and urged the governments to implement them.

The Committee was also made aware of the alarming reports reported from India on coconut root wilt, tungro of rice from the Philippines, Indonesia and other countries as well as cassava mosaic from Indonesia. All member countries were, therefore, advised to intensify their research programmes designed to develop rapid methods of detection and effective means of suppressing/controlling these diseases. Particular attention should also be given to several other virus diseases, i.e. those of tobacco, soyabean, sugarcane and other crops.

X. CHEMICAL CONTROL OF PESTS AND DISEASES - PESTICIDE RESIDUES WITH PARTICULAR EMPHASIS ON AGRICULTURAL COMMODITIES IN INTERNATIONAL TRADE

The Committee considered the invitational paper prepared by Mr. J.T. Snelson and appreciated the contribution.

It was acknowledged that pesticides were widely used as essential tools for improving food and fibre production. Further it was anticipated that they would have to be used extensively for an indefinite period.

In tropical and sub-tropical areas crop protection problems were generally more acute and the residual effectiveness was less than in other parts of the world. Hence generally there was a need for pesticides to be applied more frequently and possibly at higher rates of application in the tropics than in temperate regions. There was a current trend toward the adoption of more selective and less persistent pesticides and toward a more judicious use of them.

Accepting the definition of "Good Agricultural Practice" as formulated by Codex Alimentarius, the Committee agreed that good agricultural practice should at all times prevail and accepted the fact that residues resulting from good agricultural practice must be recognized as being unavoidable.

The Codex Alimentarius Commission (C.A.C.) operating under the Joint FAO/WHO Food Programme had made considerable progress in recommending maximum residue limits for acceptance by governments. This had been done with the dual objective of ensuring safety of the consumer and that residue tolerances did not act as impediments to international trade.

The Committee observed that maximum residue limits (MRL) recommended by C.A.C. had not yet been accepted by a number of countries and that for a majority of commodities produced in the Region MRL's of most pesticides had not yet been recommended.

The Committee was particularly interested in the southeast Asia situation and recommended:

1. that member countries make their priorities in respect of commodity/pesticide combination known to FAO for consideration by the Joint FAO/WHO Meeting of Experts on Pesticide Residues;

2. that member countries show an active interest in the work of the C.A.C. and participate in its deliberations, wherever it is practicable to do so, as recommended by the Eleventh FAO Regional Conference in 1972;

3. that C.A.C. and the Joint FAO/WHO Expert Panel on Pesticide Residues give priority consideration to requests submitted by member countries;

4. that FAO endeavour to obtain acceptance at an early date, by all countries, of the MRL's that have been recommended by C.A.C.;

5. that the Good Agricultural Practice considered appropriate in recommending specific MRL's should be compiled by the FAO/WHO Panel of Experts in the use of Pesticides in Agriculture and made available to member countries for their guidance;

6. that member countries should assemble data on pesticide residues under good agricultural practices on agricultural products, particularly those moving in international trade. This information should be made available by member countries to FAO for consideration by the FAO/WHO Panel of Experts on the use of Pesticides in Agriculture;

7. that member governments should create and expand facilities for initiating/strengthening pesticide residue analysis and should encourage monitoring of pesticide residues in food and feed stuffs.

XI. HIGH-YIELDING VARIETIES AND THEIR PEST AND DISEASE PROBLEMS

The high-yielding varieties of rice, wheat and some other food crops have contributed to the breakthrough in agricultural production. Meanwhile some special plant protection problems have arisen in the extensive utilization of these varieties. After reviewing the current situation in the Region the Committee recommended that cooperative efforts should be made by the breeders, entomologists, nematologists, pathologists and other concerned scientists in developing high-yielding varieties of crops with resistance to major pests and diseases. It was unanimously agreed that the newly developed varieties must possess polygenic resistance to important pests and diseases before they were released to farmers. Growing of a single variety over extensive areas should be discouraged. Countries with extensive cultivation of high-yielding varieties should simultaneously develop strong surveillance programmes to enable warning and planning of control measures. The Committee appreciated the initiative taken by FAO in holding an Expert Panel on the Rice Gall Midge. The Committee also suggested that problems of regional importance might be considered by a Panel of Experts for the guidance of member countries. The Committee also recognized the value of rapid introductions of high-yielding varieties of crops but strongly cautioned against bulk imports of seeds without proper inspection, treatment and trial in localized areas.

XII. RODENTS IN AGRICULTURE WITH SPECIAL REFERENCE TO ECOLOGY, POPULATION DYNAMICS AND DEVELOPMENT OF EFFECTIVE CONTROL SYSTEMS

The vertebrate pests, particularly rodents and birds, continue to cause heavy losses to agriculture in most of the Region. There is a great need for the intensification of research on ecology, population and dynamics and control of vertebrate pests.

The Committee was made aware of the Report of the Regional Panel of Experts on Vertebrate Pest Management held in Bangkok in September 1973. The Committee appreciated the initiative taken by FAO in calling such a meeting. The Committee, while endorsing the conclusions and recommendations made by the Panel, reiterated the following points:

(i) a regional coordinated project for rodent pest control should be initiated and a Regional Coordinator for directing this work should be appointed;

(ii) national centres with adequate funds, personnel and facilities should be established in member countries for conducting research and field evaluation on vertebrate pests;

(iii) regular training in vertebrate pest control for all plant protection and extension personnel should be organized;

(iv) one organization in every member country should be charged with the responsibility of evolving national policy on organizing large-scale and on a continuing basis control operations in the country.

XIII. RESISTANCE OF PLANT PESTS AND DISEASES TO PESTICIDES

With increased and indiscriminate use of pesticides, a number of plant pests and pathogens have developed resistance to one or more pesticides/ groups of pesticides. The Committee was made aware of several reports from the Region and are indicated below. However, additional information and particulars should be obtained by referring to the concerned authorities from the countries in the Region.

The Committee, while considering this problem, anticipated serious difficulties and recommended that the reports on resistance to pesticides should be verified by member countries using the procedures laid down by the FAO Working Party of Experts on Pest Resistance to Pesticides. Base line values for pesticide resistance should be established for important pests (inclusive of field rats) for future reference in monitoring of development of pesticide resistance in agricultural pests as well as in the maintenance of cultures of susceptible populations. For such work, in most countries of the Region, facilities are inadequate and need to be established/strengthened. The Committee also recognized the need to adopt measures aimed at delaying the development of resistance in pests and pathogens to pesticides. In this connection, it urged that the information provided by the FAO Working Party of Experts on Pest Resistance to Pesticides should be utilized by member countries in teaching, extension, education and policy-making in plant protection.

INSECT RESISTANCE CASES REPORTED IN THE AREA

AUSTRALIA

Codling moth	Lead Arsenate, DDT
Banana root borer	Dieldrin
Blow fly	Organophosphates
Tribolium castaneum	Malathion

INDIA

Potato tuber moth (*Pthorimoea operculella*)	DDT
Singhara beetle (*Galeurucella birmanica*)	DDT, BHC
Tribolium castaneum	Malathion
Plutella xylostella	Parathion
Bandicota bengalensis (rat)	Warfarin

JAPAN	
Rice stem borer (*Chilo suppressalis*)	Parathion, BHC, Fenitrothion
Rice Green Hopper (*Nephotettix cincticeps*)	Malathion, Organophosphates
Cabbage butterfly (*Pieris rapae crucivora*)	DDT
Onion maggot (*Hylema antiqua*)	Aldrin, Heptachlor
Green Peach Aphid (*Myzus persicae*)	Malathion, ESP
European red mite (*Panonychus ulmi*)	CMP, PMP
Citrus red mite (*Panonychus citri*)	Phencapton, Dimethoate
Small plant hopper (*Laodelphus striatellus*)	BHC, Malathion, Carbamates
Rice Blast disease	Kasumin
MALAYSIA	
Diamond back moth	Malathion
NEPAL	
Stored grain pest (suspected case)	Malathion
NEW CALEDONIA	
Tetranychus urticae	Lindane, Malathion
THAILAND	
Diamond back moth	All chlorinated hydrocarbons
Heliothis armigera	Most chlorinated hydrocarbons
Cabbage looper	Chlorinated hydrocarbons and most organophosphates
Patanga succincta	BHC
VIETNAM	
Diamond back moth	Organochlorine compounds - almost all organophosphate compounds
Brown plant hopper (*Nilaparvata lugens*)	Organophosphate compounds in some localities

XIV. MAJOR PLANT PROTECTION PROBLEMS IN RELATION TO RAINFED AGRICULTURE WITH SPECIAL REFERENCE TO CEREAL GRAINS AND LEGUMES

In the Region efforts are being made to increase productivity under rainfed agriculture conditions utilizing high-yielding varieties, new cropping systems and increased inputs. This has given rise to new pests and disease situations such as gall midge in India and Vietnam, downy mildew of maize and Heliothis complex on soybean in Thailand and pulses and weeds in India, downy mildew and ergot on Pearl millet and shoot fly and earhead midge on sorghum in India. The Committee recognized that the special plant protection problems would be accentuated with intensification of rainfed agriculture and new and serious problems would emerge. Therefore, it considered it imperative that suitable technological, institutional and administrative measures be taken by member countries to meet the emerging plant protection problems. The Committee urged that specific problems in each area needed to be identified and research efforts intensified as the vast rainfed areas held the key to overall increased productivity.

XV. DEVELOPMENT OF POLICIES AND PROGRAMMES OF PLANT PROTECTION IN RELATION TO SMALL FARMERS

Plant protection measures/systems for most crops grown under intensive cultivation have been developed in most countries of the Region; however, these have not yet reached the great majority of small and marginal farmers. The Committee reviewed the existing situation in the Region and recommended that the pest control services be organized at governmental/cooperative/institutional levels as purchasing and maintaining of plant protection materials and other inputs are generally beyond the resources of most small and subsistence farmers.

There is urgent need for developing effective and cheaper/economically feasible plant protection measures/schedules.

The Committee also suggested that suitable technology and methods should be developed for easy adaptation by small farmers. Extension services should be particularly articulated for meeting the needs of small and marginal farmers adequately and timely.

XVI. SOUTH AMERICAN LEAF BLIGHT

The Committee has become aware that discussions have taken place involving certain countries interested in rubber production within the Region, in relation to SALB. The Committee hoped that it would be kept informed of any developments when these were finalized as the Committee, since its inception in 1956, has been significantly involved with South American leaf blight.

XVII. ISSUING OF CERTIFICATES

The Committee considered that a compilation of authorities in member countries, responsible for the issuance of certificates covering plants and related organisms would be most helpful. Accordingly, FAO was requested to ascertain the authority responsible for issuing certificates and obtain details of certification offered in respect of at least two categories, namely: plant materials and plant products; and beneficial insects, such as bees and silkworms.

XVIII. CONTAINER SHIPPING

Member countries indicated a continued expansion of the use of containers in international shipping. The Committee stressed the need for quarantine authorities in member countries to develop procedures to meet the situation.

The Committee was pleased to observe that Japan might provide facilities for a Technical Meeting of official and commercial interest to discuss quarantine aspects of container operations. It was urged that every endeavour be made by FAO to convene such a meeting and to explore the possibility of arranging for some financial assistance to some of the prospective participants.

In the preparation of the agenda for any such meeting, emphasis should be placed on plant quarantine problems associated with containers.

XIX. POST ENTRY FACILITIES AND ADEQUATE DIAGNOSIS FACILITIES

During the deliberations of the Committee a suggestion was made that the Committee should consider the feasibility of establishing an ideal quarantine station on an island with associated appropriate laboratory facilities.

Acknowledging the real and practical difficulties involved not only in the establishment of such a unit, but also in its staffing and servicing, the delegates were pleased to accept an offer, from New Zealand and Australia, to provide intermediate quarantine for plant material on a limited basis. This offer included the following definite conditions:

- prior arrangements were to be made with the country offering this service, before any plant material was moved to intermediate quarantine and the Regional Plant Protection Officer, Bangkok, was to be kept informed;

- the importing country would undertake to provide final clearance of the imported plant material before it were moved from intermediate quarantine to the recipient country and meet the cost of any specialist officer from the importing country visiting Australia or New Zealand;

It was to be understood that the above arrangements were to apply to those crops where intermediate quarantine is specifically required.

XX. TRUST FUND

The Committee reiterated the need for the establishment of a Trust Fund to be administered by the FAO Regional Office, Bangkok, under the overall supervision of the Committee for the purpose of speedily undertaking activities of an urgent nature in relation to serious and sudden outbreaks of pests or diseases within the Region. The recent occurrence of Promecotheca cumingii, a leaf miner of coconut, in Sri Lanka was an excellent example where the availability of such a Trust Fund would have been most helpful. The Fund could also be used at the discretion of the Committee for any other activity.

Accordingly, the Committee recommended that FAO explore as wholly as possible a basis for the establishment of a Trust Fund for the Region for the purpose of promptly carrying out control or eradication measures in the event of a serious new disease or pest appearing in a localized place within the Region. It was envisaged that the Fund be generally used as a catalyst until such time when other resources of financial support were organized. This was a matter on which the guidance of the FAO Regional Conference would prove most useful.

XXI. TRAINING IN PLANT PROTECTION

The Committee recognized the urgent need to spread plant protection technology throughout the developing countries. To achieve this objective massive plant protection educational/training programmes, at all levels, involving scientists, administrators, extension workers and farmers should be launched. This training should be problem oriented, need based, well coordinated and integrated to be effective and meaningful. The Committee recommended that member countries establish specialized plant protection training institutes.

In this connection, the Committee was made aware that the Government of India had already set up the Central Plant Protection Training Institute at Hyderabad and was being strengthened with assistance from FAO/UNDP. Some of the countries in the Region had taken advantage of the facilities at this Institute by deputing their officers there for training. The Committee recommended that other countries make use of the facilities provided at this Institute and other similar centres.

The Committee commended the efforts made by some member countries not only to provide training to their respective quarantine staff but also to Customs Officers. To consolidate a sound and effective relationship with Customs, the Committee urged members to sustain the training programmes with Customs Officers on a continuing basis.

Throughout the Region training in plant quarantine has been actively pursued and interest was manifest in the special training programmes being provided by India, Australia and New Zealand. The Committee expressed the desire that international training courses in Plant Quarantine be held in Australia subsequent to the one scheduled for early 1974.

XXII. DESTRUCTIVE PLANT PESTS AND DISEASES NOT YET ESTABLISHED WITHIN THE REGION: REVIEW AND AMENDMENTS TO APPENDIX A TO THE AGREEMENT

In accordance with the recommendation of the Eighth Session, acknowledged authorities for certain specific hosts were approached for an appraisal of the existing list of destructive pests and diseases not yet established within the Region. Using the information kindly provided by these authorities, the Committee reviewed Appendix A and revised the list which is appended to the Report (Appendix III).

The Committee also suggested that further information be sought from appropriate authorities in relation to the following crops: clove; coffee; maize; pepper; rice; sugarcane; sweet potato and tea.

XXIII. PROGRAMME OF THE COMMITTEE

23.1 PROGRAMME

The Committee reviewed its achievements in the implementation of the programme formulated and adopted by its Eighth Session. In particular, the Committee acknowledged the following:

- the identification, formulation planning and implementation of projects. Seventeen projects are either in operation or under active consideration for nine countries within the Region;

- arrangements of ten consultancies (five specifically in four countries) since 1970;

- organization of two Regional ad hoc Panels of Experts: one on Vertebrate Pest Management and the other on Rice Gall Midge.

The Committee approved the following programme for the ensuing biennium incorporating continuing activities proposed at the previous Session of the Committee:

a) maintenance of the information service by means of quarterly newsletters, information letters and technical documents containing information on such items as plant quarantine legislation, major outbreaks of pests and diseases in the Region, organization and staff, new records of pests and diseases, latest developments in control practices, inspection and treatment procedures, as well as results of research work on pests and diseases of important food and commercial crops in the Region;

b) review and compilation of a publication of lists of diseases, pests and weeds affecting important food and commercial crops in the Region;

c) continuation of the compilation and circulation of lists of periodicals and publications containing information on plant protection issued in the territories of the Region;

d) continuation of the collection and circulation of information on plant quarantine procedures and treatments adopted by member countries;

e) advising and assisting member countries in the identification, planification, formulation and implementation of projects on plant protection;

f) assisting member countries in the planification and organization of training programmes in plant protection and plant quarantine;

g) coordination of activities and projects in relation to plant protection and plant quarantine operated in the Region with the assistance of UNDP and other agencies;

h) provision of consultantship services to contracting governments on special problems of regional importance in various aspects of plant protection;

i) endeavour to arrange a Technical Meeting on quarantine problems associated with the container operation for transport of agricultural products and goods;

j) compile for each country within the Region a list of authorities responsible for the issuance of certificates covering plants, plant products and associated organisms together with details of certification offered;

k) explore the possibility to arrange for the production of a film suitable for use by Plant Quarantine Services throughout the Region;

l) encourage member countries to participate and contribute to deliberations of the Codex Alimentarius Commission and the FAO/WHO Expert Panel on Pesticide Use in Agriculture;

m) explore the possibility to establish a Trust or Emergency Fund to be made available to the Committee for activities of an urgent nature, especially in relation to sudden outbreaks of pests or diseases.

The Committee strongly felt that the Executive Committee, formerly the Standing Technical Sub-Committee, should continue to meet at least once in between Sessions of the Committee to review and, if necessary, modify the activities of the Committee as well as continue to provide assistance and guidance to the Secretary.

23.2 OFFICERS

It was agreed that the Executive Committee be composed of:

S.N. Banerjee	Chairman
J.R. Morschel	Australia
Riksh Syamananda	Thailand
M.S. Hartap	Indonesia

The Secretary will continue to act as Convener of the Executive Committee while fulfilling his duties as Secretary.

23.3 NEXT SESSION

The Committee was unable to reach a decision on the possible venue for the Tenth Session. The Secretary was requested to initiate some enquiries and, upon receipt of some positive response, was authorized to make the usual request to the Director-General of FAO that formal negotiations be initiated at an early date. The Executive Committee should be kept fully informed of developments so that the next Session might be held in 1975.

XXIV. GENERAL RECOMMENDATIONS

24.1 PLANT PROTECTION CONVENTION

The Committee

Recognizing that the Plant Protection Convention is essential in the facilitation of the movement of plant material and agricultural products between countries;

Acknowledging that any proposal for amending the Plant Protection Convention needs to be submitted to FAO Council by a member government;

Considering that the next FAO Council is expected to meet about November 1974;

Recommended that all member countries provide their comments to FAO, Rome, on suggestions and recommendations contained in the report of the ad hoc Consultation by 1 September 1974.

24.2 CONTAINER MOVEMENT OF GOODS

The Committee

Acknowledging that the movement of goods, especially plant products, between countries in containers continues to increase at a rapid rate;

Recognizing that with the increased use of containers specific problems, such as Khapra beetle, are likely to intensify;

Appreciating the efforts of Japan in convening the Technical Meeting on container shipping for plant protection/plant quarantine staff in the Region;

Recommended that FAO consider convening a Technical Meeting within the Region involving official and commercial interests with a view to establishing procedures and techniques which would minimize the plant quarantine risks associated with container shipping.

24.3 PESTICIDE RESIDUES

The Committee

Recognizing that application of pesticides is essential for improving and maximizing food and fibre production;

Considering that movements of agricultural products may be adversely affected by pesticide residues;

Acknowledging that the Codex Alimentarius Commission operating under the Joint FAO/WHO Food Programme recommends maximum residue limits for acceptance by governments;

Recommended that member countries should assemble as much data as possible on pesticide residues, consistent with good agricultural practice, on important agricultural products of the Region and actively participate in the work of the Codex Alimentarius Commission.

24.4 SMALL FARMERS

The Committee

Recognizing that the majority of farmers in the Region are small and marginal and that most of them depend on rainfed agriculture for sustenance and often are not able to take advantage of breakthrough in technology;

Acknowledging that the overall increase in agricultural production in several countries of the Region, to a large extent, depends on the increased productivity of a great majority of small farmers;

Considering that small farmers have limited resources both in regard to finance, credit, equipment, skill and technology;

Recommended that all efforts be made to develop suitable technology for small farmers, provide adequate credit and marketing facilities, extend advisory services and provide the necessary institutional support for enabling them to take effective and timely plant protection measures.

APPENDIX I

A G E N D A

1. Opening of the Session
2. Election of the Chairman
3. Adoption of the Agenda
4. Designation of Vice-Chairman and ad hoc Sub-Committee
5. Present status of the Plant Protection Agreement for the southeast Asia and Pacific Region
6. Programme and activities of the Committee - Statement by the Secretary
7. Implementation of the Agreement and recommendations of the Committee - Statement by Delegates
8. Measures designed to prevent the introduction into, and spread within, the Region of plant pests and diseases
9. Special plant protection problems in the Region:
   - (a) risks in bulk imports of plant materials;
   - (b) communication in plant quarantine within the Plant Quarantine Service and with the Public;
   - (c) plant viruses: their detection and control;
   - (d) chemical control of pests and diseases and pesticide residues with particular reference to agricultural commodities in international trade;
   - (e) high-yielding varieties and their pest and disease problems;
   - (f) rodents in agriculture, with special reference to ecology, population dynamics and development of effective control systems;
   - (g) resistance of plant pests and diseases to pesticides;
   - (h) major plant protection problems in relation to rainfed agriculture with special reference to cereal and grain legumes;

(i) development of policies and programmes of plant protection in relation to small farmers

10. Training in plant protection

11. Destructive plant pests and diseases not yet established within the Region: Review and amendments to Appendix A to the Agreement

12. Programme of the Committee

13. Time and place of the Tenth Session of the Committee

14. Other business

15. Adoption of the Report

APPENDIX II

LIST OF DOCUMENTS DISTRIBUTED AT THE NINTH SESSION OF THE PLANT PROTECTION COMMITTEE, 2-9 NOVEMBER 1973

NEW DELHI, INDIA

Working Paper	Title	Country/ Organization
AGP:PPC/SEAP/73/1	Provisional Agenda and Notes	FAO
AGP:PPC/SEAP/73/2	Information Note	FAO
AGP:PPC/SEAP/73/5/3	Status of Plant Protection Agreement	FAO
AGP:PPC/SEAP/73/5/4	Status of Plant Protection Agreement - Supplementary Information	FAO
AGP:PPC/SEAP/73/6/5	A Brief Report of the Programme and Activities of the Plant Protection Committee, October 1971-December 1972	FAO
AGP:PPC/SEAP/73/6/6	Review of the Programme of the Committee in view of the Discussions and Recommendations of the 11th FAO Regional Conference 1972 - a Note by the Secretary	FAO
AGP:PPC/SEAP/73/6/7	Report of the 9th Meeting of the Standing Technical Sub-Committee, 17-19 January 1973	FAO
AGP:PPC/SEAP/73/6/8	Report of the 10th Meeting of the Standing Technical Sub-Committee	FAO
AGP:PPC/SEAP/73/6/9	Programme and Activities of the Committee - Statement by the Secretary	FAO
AGP:PPC/SEAP/73/6/25	List of Technical Documents and Information Letters	FAO
AGP:PPC/SEAP/73/6/26	Report of the *ad hoc* Consultation on International Plant Protection Convention	FAO
AGP:PPC/SEAP/73/6/27	*Ad hoc* Consultation on International Plant Protection Convention - Information Letter No. 100	FAO
AGP:PPC/SEAP/73/6/42	*Ad hoc* Consultation on the International Plant Protection Convention	FAO

Working Paper	Title	Country/ Organization
AGP:PPC/SEAP/73/7/18	Country Statement	Australia
AGP:PPC/SEAP/73/7/26-1	Country Statement	India
AGP:PPC/SEAP/73/7/28	Activities of Plant Protection and Plant Quarantine in Indonesia, 1971-1973	Indonesia
AGP:PPC/SEAP/73/7/31	Implementation - Japan	Japan
AGP:PPC/SEAP/73/7/32	Implementation of programme - Malaysia	Malaysia
AGP:PPC/SEAP/73/7/34	Plant Protection Activities in Vietnam	Vietnam
AGP:PPC/SEAP/73/7/39	Country Statement	Thailand
AGP:PPC/SEAP/73/7/40	Country Statement	Hong Kong
AGP:PPC/SEAP/73/7/49	Country Statement - South Pacific Commission	SPC
AGP:PPC/SEAP/73/7/51	Country Statement	Nepal
AGP:PPC/SEAP/73/7/53	Country Statement	Sri Lanka
AGP:PPC/SEAP/73/7/54	List of pests of agricultural crops known in Indonesia	Indonesia
AGP:PPC/SEAP/73/7/55	List of diseases of agriculture crops known in Indonesia	Indonesia
AGP:PPC/SEAP/73/7/56	List of pests of stored products known in Indonesia	Indonesia
AGP:PPC/SEAP/73/8/10	Measures designed to prevent the Introduction into, and spread within the Region of Plant Pests and Diseases	FAO
AGP:PPC/SEAP/73/8/11	Recommended Measures for regulating the importation and movement of Plants - Information Letter No. 94	FAO
AGP:PPC/SEAP/73/9a/19	Risks in bulk imports of plants - Australia	Australia
AGP:PPC/SEAP/73/9a/24-a	Risks in bulk import of plant materials - India	India
AGP:PPC/SEAP/73/9a/29	Eradication of Khapra beetle in imported rice - Indonesia	Indonesia

Working Paper	Title	Country/ Organization
AGP:PPC/SEAP/73/9b/20	Communication with the Plant Quarantine Service and with the public - Australia	Australia
AGP:PPC/SEAP/73/9b/35	South American Leaf Blight of Rubber - Leaflet - RRIM	RRIM
AGP:PPC/SEAP/73/9b/37	Plant Quarantine Information Sheet - Import by air - India	India
AGP:PPC/SEAP/73/9b/38	Plant Quarantine Information Sheet - Import by sea - India	India
AGP:PPC/SEAP/73/9b/46	Australian Plant Quarantine - Brochure	Australia
AGP:PPC/SEAP/73/9b/50	Rodents in agriculture and development of effective control systems - India	India
AGP:PPC/SEAP/73/9b/52	History of Plant Quarantine and its Functioning in India	India
AGP:PPC/SEAP/73/9c/17	Plant Viruses; their detection and control - Y.L. Nene	India
AGP:PPC/SEAP/73/9c/21	Plant Viruses; their detection and control - Australia	Australia
AGP:PPC/SEAP/73/9c/30	Virus diseases in citrus in Indonesia	Indonesia
AGP:PPC/SEAP/73/9c/48	Citrus Greening Disease in Thailand	Thailand
AGP:PPC/SEAP/73/9c/57	Some aspects associated with recommendations formulated in the reports of the Seventh and Eighth Sessions concerning the decline of citrus in southeast Asia	Indonesia
AGP:PPC/SEAP/73/9c/58	On an outbreak of 'Penyakit Habang' (Tungro) on rice in central and south Sulawesi-Indonesia	Indonesia
AGP:PPC/SEAP/73/9d/22	Chemical control of Pests and Diseases Pesticide Residues with particular emphasis on agricultural commodities in international trade - J.T. Snelson	Australia
AGP:PPC/SEAP/73/9d/23	Chemical Residues and their International Implications - J.T. Snelson	Australia

Working Paper	Title	Country/ Organization
AGP:PPC/SEAP/73/9e/12	High-Yielding Varieties and their Pest and Disease Problems	FAO
AGP:PPC/SEAP/73/9c/13	The Rice Gall Midge in Asia and the Far East	FAO
AGP:PPC/SEAP/73/93/24	High-Yielding Varieties and their Pest and Disease Problems	India
AGP:PPC/SEAP/73/9e/59	The Rice Production Programme in Indonesia with reference to Policies on Plant Protection	Indonesia
AGP:PPC/SEAP/73/9f/14	Rodents in Agriculture, with special reference to Ecology, Population Dynamics and Development of Effective Control Systems	FAO
AGP:PPC/SEAP/73/9f/15	Vertebrate Pest Management in Asia and the Far East	FAO
AGP:PPC/SEAP/73/9g/43	Resistance of Plant Pests and Diseases to Pesticides	FAO
AGP:PPC/SEAP/73/9h/44	Major plant protection problems in relation to rainfed agriculture with special reference to Cereal and Grain Legumes	FAO
AGP:PPC/SEAP/73/9h/60	Education and Training in Weed Science	Indonesia
AGP:PPC/SEAP/73/9i/45	Development of Policies and Programmes of Plant Protection in relation to Small Farmers	FAO
AGP:PPC/SEAP/73/10/33	Training in plant protection	India
AGP:PPC/73/10/36	Plant Quarantine Information for Customs Officers	India
AGP:PPC/SEAP/73/10/41	Training in Plant Protection in Hong Kong	Hong Kong
AGP:PPC/SEAP/73/11/16	Destructive Plant Pests and Diseases not yet established within the Region	FAO

APPENDIX III

LIST OF DESTRUCTIVE PESTS AND DISEASES NOT YET ESTABLISHED
IN THE SOUTHEAST ASIA AND PACIFIC REGION (APPENDIX A OF THE AGREEMENT)
AS AMENDED BY THE FIRST, SECOND, THIRD,
SIXTH AND NINTH SESSIONS OF THE COMMITTEE

Pest/Disease	Common Name	Known Distribution
BANANA (*Musa* spp.)		
Virus	Bunchy top	Fiji, Australia, Sri Lanka, India
Radopholus similis	Burrowing nematode	U.S.A. (Florida)
COCOA (*Theobroma cacao*)		
Sahlbergella singularis Hagl.	Capsid bug causing die-back	West Africa, Congo, Angola
Distantiella theobroma Dist.	Capsid bug causing die-back	West Africa, Congo
Helopeltis bergrothi Rent.	Capsid bug causing canker	Africa
Stenoma decora Zeller	Cacao fruit and shoot borer	Brazil
Bathycoella thalassina	-	West Africa
Marasmius perniciosus Stahel	Witches' broom	West Indies, South America
Monilia roreri Cif.	Monilia pod rot	South America, Panama
Oncobasidium theobromae	Vascular streak die-back	Papua New Guinea, W. Malaysia
Trachysphaera fructigena Tabor et Bunting	Trachysphaera pod rot	Africa
Swollen shoot virus complex	Swollen shoot	West Africa (certain strains occur in Sri Lanka. Similar diseases probably also occur in Colombia, Venezuela and Java)
Cacao red mottle virus	Red mottle	Trinidad
Cacao vein-clearing virus	Vein clearing	Trinidad

Pest/Disease	Common Name	Known Distribution
CASSAVA (*Manihot esculenta*)		
Phaeolus manihotis Heim	Root rot	Madagascar
Cassava brown streak virus	Brown streak	East Africa, Southern Rhodesia, Malawi
Cassava mosaic virus	Mosaic	Africa, Brazil, Indonesia
CITRUS (*Citrus* spp.)		
Anastrepha fraterculus (Wied)	-	Mexico, Central and South America
Anastrepha ludens (Lowe.)	Mexican fruit fly	Mexico, Central America
Anastrepha mombinpraeoptans Sein	West Indian fruit fly	U.S.A. (Florida, Texas), Mexico, Central America, Brazil, West Indies
Anastrepha spp.	Fruit flies	America (tropical and warm regions)
Ceratitis rosa Karsch	Natal fruit fly	Africa
Ceratitis capitata (Wied.)	Mediterranean fruit fly	Europe, Near East, Africa, W. Australia, Central and South America
Dacus tryoni (Frogg.)	Queensland fruit fly	Australia (Queensland and part of N. South Wales), Madagascar, French Polynesia
Deuterophoma tracheiphila Petri	Mal secco	Mediterranean region
Citrus stubborn disease virus	Stubborn disease	California, Arizona
Citrus greening (MLO)	Mycoplasma-like organism	S. Africa, Thailand, Nepal, India, Indonesia, Philippines
Radopholus similis (citrus race)	Burrowing nematode	Florida
COCONUT (*Cocos nucifera*)		
Pachymerus nucleorum (F.)	Coconut borer	Brazil, Guyana, Paraguay
Pseudotherantus Wayi Br.	Coreid bug	East Africa, Zanzibar

Pest/Disease	Common Name	Known Distribution
COCONUT (continued)		
Pseudotherantus devastans (Dist.)	-	West Africa
Rhynchophorus palmarum (Linn.)	Palm weevil	Central and South America, West Indies
Oryctes monoceros	-	-
Oryctes boas	-	-
Coelaenomenodera elaeidis Maylik.	Leaf miner	-
Melitomma insulare Frm.	Wood borer	Seychelles
Tatipaka	Cause unknown	India
Cadang Cadang	Cause unknown	Philippines
Rhadinaphelenchus cocophilus	Red ring disease	West Indies, Central America, Brazil, Panama, Venezuela
COFFEE (Coffea spp.)		
Antestiopsis spp.	Pentatomid bugs	-
Leucoptera coffeella (Guer.)	White coffee leaf miner	S. America, West Indies
Planococcus kenyae (Le Pelley)	Mealy bug	East and West Africa, Congo
Omphalia flavida Mauble et Rangel	American leaf spot	Mexico, U.S.A., West Indies, Central and South America
Trachysphaera fructigena Tabor et Bunting	Trachysphaera fruit rot	Africa
Gibberella xylarioides (Stey.) Heim et Saccas	Tracheomycosis	Africa
Coffee blister spot virus	Blister spot	Costa Rica
Virus	Mancha mantecosa	Costa Rica
COTTON (Gossypium spp.)		
Anthonomus grandis Boh.	Mexican cotton boll weevil	West Indies, Mexico, Central America, Venezuela, U.S.A.
Anthonomus vestitus Boh.	Peruvian cotton boll weevil	Peru
Anthonomus spp.	Boll weevils	New World

Pest/Disease	Common Name	Known Distribution
COTTON (continued)		
Phymatotrichum omnivorum (Shear) Duggar	Texas root rot	Mexico, U.S.A.
Sacadodes pyralis Dyar	False pink bollworm	Trinidad, Guyana, Venezuela, Colombia, Costa Rica, Panama, Nicaragua
Cotton leaf curl virus	Leaf curl	Africa
HEVEA RUBBER (Hevea brasiliensis)		
Leptopharsa heveae Drake	Lace bug	Tropical America, Brazil
Microcyclus ulei P. Henn.	South American leaf blight	Mexico, Central America, West Indies, South America
MAIZE (Zea mays)		
Diatraea spp. esp. D. saccharalis (F.)	Stalk borers	Southern U.S.A., Mexico, West Indies, Central America, South America (certain species occur in the Region)
Sesamia cretica Led.	Durra stem borer	Africa, Mediterranean region
Xanthomonas stewartii (E.F. Smith) Dowson	Bacterial wilt	Canada, Mexico, Puerto Rico, U.S.A., Italy, U.S.S.R.
OIL PALM (Elaeis guineensis)		
Pachymerus lacerdae (Chevr.)	Kernel borer	West Africa
Pachymerus nucleorum (F.)	Kernel borer	Brazil, Guyana, Paraguay
Pimelephila ghesquierii Tams.	A pyralid	West Africa, Congo
Fusarium oxysporum Schlect.	Fusarium wilt	West Africa
Cercospora elaeidis Stey.	Freckle	West Africa, French Equatorial Africa, Congo

Pest/Disease	Common Name	Known Distribution
PAPAYA (*Carica papaya*)		
Papaya bunchy top virus	Bunchy top	U.S.A., West Indies, Sri Lanka, Tanganyika, India, Sudan
Papaya mosaic virus	Papaya mosaic die-back	Tanganyika
Papaya ring spot virus	Papaya ring spot and others	Hawaii
POTATO (*Solanum tuberosum*)		
Leptinotarsa decemlineata Say.	Colorado beetle	North America, Europe
Corynebacterium sepedonicum (Spieck. et Kotth.) Skapt et Burk.	Bacterial ring rot	North America, Costa Rica, Venezuela, Europe, Japan
Synchytrium endobioticum (Schilb) Perc.	Black wart	South Africa, Europe, North and South America, India (West Bengal), Nepal (Illam)
Heterodora rostochiensis Wr.	Golden nematode	Europe, U.S.A. (New York), South America (Peru), Algeria, Israel, N. Zealand (Pukehoke), Japan (Hokkaido), Canada (Newfoundland and Vancouver Island), India (Nilgiris)
Oospora pustulans Owen et Wakef.	Skin spot	Canada, Australia, Norway, U.K., Ireland, New Zealand
Ditylenchus destructor	Potato rot nematode	N. Western U.S.A., Prince Edward Island (Canada), Western and Southern borders of U.S.S.R.

Pest/Disease	Common Name	Known Distribution
RICE (*Oryza sativa*)		
Diatraea spp.	Stem or stalk borers	Southern U.S.A., Mexico, West Indies, Central America, South America, U.S.A.
Sogatodes oryzicola and *cubana*	-	U.S.A., South and Central America
Rice dwarf virus	Dwarf	Japan
Rice stripe virus	Stripe	Japan
Rice hoja blanca virus	White leaf (Hoja blanca)	America, South America, U.S.A.
SUGARCANE (*Saccharum* spp.)		
Diatraea spp. esp. *D. saccharalis* (F.)	Stalk borers	Southern U.S.A., Mexico, West Indies, Central America, South America (certain species occur in the Region)
Diaprepes abbreviatus L.	Sugarcane root-stalk borer weevil	West Indies
Xanthomonas albilineans (Ashby) Dow.	Leaf scald	Madagascar, Mauritius, Taiwan, Reunion, Hawaii, Cambodia, Vietnam, Java, Philippines, Australia
Xanthomonas vasculorum	Gumming disease	Australia, South America, Mexico, West Indies, Reunion, Mauritius, Medeira, South Africa, Madagascar, Indonesia
Clemona smithi Arr.	White cane grub	Barbados, Trinidad, Mauritius
Sugarcane ratoon stunting virus	Ratoon stunting	Australia, Africa, Mexico, West Indies, Hawaii, Fiji, Central America, South America, U.S.A., Philippines, Taiwan

Pest/Disease	Common Name	Known Distribution
SWEET POTATO (*Ipomoea batatas*)		
Euscepes postfasciatus (Fairm.)	West Indian sweet potato weevil	West Indies, Brazil, Pacific Islands
Sweet potato internal cork virus	Internal cork	U.S.A.
Sweet potato mosaic virus	Mosaic	East Africa, Congo (reported to occur in Sri Lanka)
Sweet potato dwarf virus	Dwarf	Ryukuyu Islands
TEA (*Thea sinensis*)		
Exobasidium reticulatum	-	Japan
Virus	Phloem necrosis virus	Sri Lanka
TOBACCO (*Nicotiana* spp.)		
Ephestia elutella (Hbn.)	Tobacco moth	America, Congo, Mozambique, West Africa
Pseudomonas tabaci (Wolf et Foster) Stevens	Wildfire	North America, Venezuela, Africa, Europe, Japan, China (Taiwan), Iran, Turkey
Peronospora tabacina Adam	Blue mold	Australia, North America, South America, North Africa
TUNG (*Aleurites fordii*)		
Septobasidium aleuritidis Heim et Bour	Branch canker	Madagascar

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